ABSTRACT

In a fiberoptical network, for example in a LAN, spread spectrum modulation is used, for example CDMA, by providing an electrical digital data signal to spreading means comprising a multiplier (41) also receiving the spreading code. Then a modulation is made of the spread signal at radio frequencies, the signal being multiplied (49) by a subcarrier wave generated in an oscillator (47), whereby the data signal is carried on an RF subcarrier. A control channel signal from a control unit (53) is added (51) to the modulated signal, so that the control signal will be located in the baseband. The added signal is converted (55) to an optical signal transmitted on an output fiber. The control channel signal can be TDMA-modulated using collision detection. Making spectrum spreading in the electrical domain allows the use of standard components developed for example for mobile telephone systems. No wavelength control and no optical filters are necessary, what allows a low cost system to be constructed. Alternatively the spread-spectrum data signal can be located in the baseband and the control channel on a sub-carrier or both the data and the control channel can be put on subcarriers.

(Fig. 4a)